BEFORE THE

FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C. 20554

In the Matter of	)	DA 92-347
Local Exchange Carrier Line Information Database	)	CC Docket No. 92-24

THE SOUTHERN NEW ENGLAND TELEPHONE COMPANY
REPLY TO ISSUES DESIGNATED FOR INVESTIGATION

I. INTRODUCTION

The Southern New England Telephone Company (SNET) hereby submits this Reply pursuant to the Federal Communications Commission's (Commission's) Order designating issues for investigation.[1] The Designation Order identifies specific issues relating to several local exchange carriers' (LECs') offerings, including SNET's offering of line information database (LIDB) service.

SNET filed tariff transmittals[2] which proposed rates and charges for SNET's Common Channel Signaling Access Service (CCSAS) and LIDB Service. MCI was the only party to file opposition to SNET's tariff. These tariffs became effective on February 12, 1992 pursuant to the Commission Order which

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[1] In the Matter of Local Exchange Carrier Line Information Database, DA 92-347, CC Docket No. 92-24, Order Designation Issues For Investigation, released March 20, 1992, (Designation Order).

[2] SNET Tariff Transmittal No. 531 and SNET Tariff Transmittal No. 533.

suspended SNET's tariff transmittal for one day, imposed an accounting order, and initiated an investigation of SNET's tariff.[3] The Commission Order specified that the Commission would investigate SNET's transmittals as part of the investigation of other LECs' LIDB tariffs that were established in the LEC LIDB Order.[4]

In this Reply, SNET is filing responses to the issues outlined in the Commission's Designation Order. SNET believes that the rates currently in effect for LIDB service are reasonable and that SNET's tariff sufficiently addresses the parameters of LIDB service and makes appropriate references to specific technical publications.

II. ISSUES DESIGNATED FOR INVESTIGATION

FCC ISSUE I.

Have the LECs adequately described the LIDB query service in the tariffs? Petitioners allege that the tariffs lack sufficient detail for potential customers to be certain of what service they are receiving. Parties have argued that the LECs should provide the following information in their tariffs:

(1) the frequency, nature, and priority of database updates,

(2) the liability for erroneous information in the database;

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[3] In the Matter of Southern New England Telephone Company Tariff F.C.C. No. 39 Line Information Database, DA 92-173, CC Docket No. 92-24, Order, released February 10, 1992.

[4] Local Exchange Carriers, Line Information Database, Order, DA No. 91-1637, released December 30, 1991, (LEC LIDB Order).

(3) to the extent that carriers reference technical publications, the dates of the latest revisions to any referenced technical publication should be in the tariff;

(4) liability for fraudulent use of calling cards;

(5) "Call gapping" procedures;

(6) additional technical parameters for processing database queries.

SNET REPLY

SNET's tariff for LIDB service includes terms and conditions which adequately describe the service offering. SNET's tariff makes reference to the Bellcore technical specifications which define, in detail, the technical specifications of LIDB service.

Referencing technical publications in the tariff is a common industry practice that makes technical information available without making the tariff a cumbersome technical document. SNET refers to Bellcore technical references in its tariff pursuant to the special permission granted from the Commission (FCC Number 91-1074).

(1) SNET's Tariff (Section 17.7.1) currently states that "The Telephone Company's LIDB will contain a current record for every working line number served by the Telephone Company. Other exchange carriers who may store their data in the Telephone Company LIDB are requested to provide this data as well." SNET believes that the tariff language is sufficient and need not reflect the frequency (SNET performs daily updates), nature and priority of database updates.

It is to SNET's benefit to maintain a current data base as SNET utilizes the database for validation of its own intrastate calling card

traffic validation. Since a large portion of SNET's revenue is dependent upon accurate and up-to-date information. Keeping the database accurate and correct is a priority.

(2) SNET's tariff F.C.C. 39 includes as Section 2.4 "Telephone Company Liability." This section addresses issues of SNET liability to its customers, providing adequate coverage of the liability issues of SNET to its customers for all services provided under SNET's interstate tariff. SNET neither includes specific tariff language which addresses liability for erroneous information in the LIDB database nor believes that it is necessary to do so.

(3) SNET's tariff currently references the technical publications for CCSAS and LIDB (Page 41.1). These references indicate the publication's latest issue date that SNET was aware of at the time of the filing. SNET intends to update its tariff to reflect the latest versions of technical publications as they become available.

(4) As discussed in Issue Number 2, above, Section 2.4, "Telephone Company Liability," of SNET's tariff addresses SNET's liability to its customers. In addition, SNET's tariff includes the following language regarding fraud:

> End user information, pertinent to the investigation, may be shared with LIDB Validation Service customers where appropriate when validation queries for the specific customer reaches or exceeds Telephone Company established fraud thresholds. This fraud threshold level will be applied uniformly to all customers.

SNET continues to move in the direction of enhancing its database capabilities to provide new fraud prevention enhancements. Software updates are planned that will provide a customer with alternatives in this area. SNET implements these updates as part of its normal business practice.

(5) SNET's tariff does not, and should not define call gapping as it is addressed in the appropriate technical publication.

(6) All technical issues and parameters are addressed, appropriately, in the technical publications for these services.

FCC ISSUE II.

Should the tariffs contain additional detail regarding the technical parameters for the CCS interconnection link?

In order to access LIDB, customers must purchase a CCS interconnection link. The tariff descriptions of the CCS interconnection service contain cross references to the technical publications and state that the CCS interconnection link is technologically equivalent to a 56 kbps special access line. In their special access tariffs, carriers specify a number of technical parameters for a 56 kbps line. Parties should address whether tariffs for CCS interconnection links should include a similar level of detail regarding technical parameters.

SNET REPLY

No, SNET's tariff should not contain additional technical references but does refer to the technical publications which include that information. See SNET Reply to Question I.

SNET believes that it is neither necessary nor appropriate to include additional detail regarding the technical parameters of the CCS interconnection link in its tariff. The tariffs for virtually all SNET access services, including SNET's 56 kbps tariff, reference applicable technical publications. In some instances the tariff does include certain summary information regarding basic technical parameters. However, the underlying details of the technical specifications are found in the technical publications, published for that specific purpose. SNET believes that referencing technical publications for the provision of CCS service is consistent with the manner in which SNET's other tariff services are treated.

FCC ISSUE III.

Are the rate levels established in the tariffs excessive? To assist in our resolution of this rate level issue, we direct the carriers specified below to provide the following information:

(1) Bell Communications Research, Inc. has developed a cost model called "Common Channel Signaling Cost Information System" (CCSCIS). Any carrier who relied on CCSCIS to develop its rates must explain why use of such a model is appropriate for common channel signalling services.

(2) Those carriers who did not use CCSCIS to allocated investment should fully explain how they identified the plant used to provide LIDB service.

(3) All filing carriers should provide total investment underlying each of the four rate elements and identify the accounts established by Part 32 of the Commission's Rules, 47 C.F.R. Part 32, in which these investments are recorded.

(4) All filing carriers should identify and fully document all factors applied to the investment identified in response to the requests for information above to develop the rates, cross-referencing to Automated Reporting Management Information System (ARMIS) data where possible.

SNET REPLY

(1) SNET believes that its rate levels are set correctly. SNET relied on Bellcore developed CCSCIS model to develop its investments on which the rates for common channel signaling and LIDB Validation services were set. SNET believes that the use of the model is appropriate for developing costs to be used in setting rates for CCSAS and LIDB services. SNET used the investments developed in CCSCIS as inputs to its MICRA model, as described in the SNET Reply to Question number 4. Attachment A provides an extensive explanation of CCSCIS which, as Bellcore describes is "an engineering based, bottom up cost calculator that is supported by the equipment manufacturers, developed and maintained by Bellcore with the cooperation of the manufacturers and utilized by SNET to cost all common channel signaling based services."

(2) Not applicable, SNET used the CCSCIS model. See above.

(3) The present value of total investments are as follows:

(1) STP Port Termination $2,086,657

(SNET Transmittal No. 533, Exhibit 2 line 1)

(2) LIDB Validation Query $ 780,655

(SNET Transmittal No. 533, Exhibit 3 line 1)

(3) LIDB Query Transport $ 31,739

(SNET Transmittal No. 533, Exhibit 4 line 1)

Part 32 Account classification can be found on Attachment B.

(4) In developing rates for CCS and LIDB, two areas required the development and/or application of various factors. First, SNET used its internally developed Model for Incremental Cost and Revenue Analysis (MICRA) to develop LIDB minimum rate requirements. Demand levels, unit investments, and expenses were used as inputs into MICRA. The model calculated and summarized investment related capital costs as well as expenses. Capital costs include depreciation, taxes and cost of money. Model results are the data source for Annual Investments, Gross Investments and Operating Expenses.

Attachment C lists the factors employed by MICRA that were in effect at the time of the LIDB filing. The sources of these factors are Company studies which estimate prospective investment-related factors.

Secondly, an overhead loading factor was developed and applied to direct unit costs which represent the "price floor" of each recurring rate element. This overhead loading factor, when applied to the direct cost, establishes what might be viewed as a "price ceiling" for the recurring rate element. All of the rates proposed by SNET fell within this range of reasonableness.

Using 1990 ARMIS data, the fully distributed cost (FDC) factor is developed by dividing the Local Transport revenue requirement (calculated at 11.25% ROR) by the net investment in the Local Transport category. The Direct Annual Cost factor is developed by dividing the sum of Plant Specific, Plant Non-Specific maintenance expense, depreciation, customer operations, return, and taxes from 1990 ARMIS report by net investment in the Local Transport category. The overhead loading factor results from dividing the FDC factor by the Direct Annual Cost factor. See Attachment D for the development of the overhead loading factor and its application to the direct costs, with the detail ARMIS references.

III. CONCLUSION

SNET believes that the rates currently in effect for LIDB service are reasonable and that SNET's tariff sufficiently addresses the parameters of CCSAS and LIDB service and makes appropriate references to specific technical publications.

Respectfully Submitted,

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TELEPHONE COMPANY

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CC DOCKET No. 92-24

III. (1) COMMON CHANNEL SIGNALING COST INFORMATION SYSTEM (CCSCIS)

As we show below, the Common Channel Signaling Cost Information System (CCSCIS) is appropriately used for developing the costs associated with services which use common channel signaling (CCS) equipment. Indeed, the CCSCIS model is an engineering based, bottom up cost calculator that is supported by the equipment manufacturers, developed and maintained by Bellcore with the cooperation of the manufacturers and utilized by SNET to cost all common channel signaling based services in both the state and federal jurisdictions. That said, CCSCIS is a complex model. Accordingly, our discussion regarding its reasonableness has been subdivided into three separate, but interrelated segments.

1. CCS networks and how they are used to provide CCS services.
2. Requirements for a CCS service cost model.
3. How CCSCIS satisfied CCS service cost model requirements.

(1.1) CCS services are provisioned by sending signaling messages between Service Switching Points (switches with signaling capabilities), or between (SSPs) and Service Control Points (data bases with network control information). These messages, which are constructed using rules defined by the SS7 protocol, carry information used by the SSPs to route or control calls. The messages travel between signaling points (SSPs and SCPs) on signaling links (facilities which carry only SS7 messages) and through Signal Transfer Points (packet switches which route the signaling messages). SNET uses CCS networks to provide many services including basic intralata and

access call services, as well as vertical services. For basic intralata calls, SS7 messages are sent between the originating switch, any intermediate tandem switches, and the terminating switch, using signaling links connecting the switches to STPs. Basic access call set-up signaling uses the same equipment, but it also uses links between an STP and a signaling point of interface (connection to an interexchange carrier's CCS network).

Vertical services which use CCS networks can be classified as either circuit-based services, or data base services. For circuit-based services such as CLASS, signaling messages are sent directly from the originating switch to the terminating switch by way of STPs and the connecting signaling links. For SS7 data base services, a switch requests information from an SCP by sending a message or query to the SCP. This message may pass from the switch to a local (lata or state) STP and then directly to the SCP, or it may pass through two STPs (local and regional) before it is transferred to the SCP. If the query is sent to an SCP owned by another company, the query traverses multiple links and STPs and at least two different CCS networks before it reaches the destination SCP.

Each element in a CCS network can be used for a different mix of services. Signaling links between SSPs and STPs, together with the associated link termination equipment on the STP, are used for basic intralata and access services, as well as for data base and circuit-based services. Signaling links between local and regional STPs and associated STP link termination equipment are used for data base services, as well as for access trunk signaling, if connection to the SPOI is through the regional STP. (SNET does not have regional STPs.) Signaling links between regional STPs and SPOIs and associated STP link termination equipment carry interregional data base

queries and access trunk signaling messages. Links from STPs to SCPs and associated STP link terminating equipment are used only by services provided by the SCP.

In addition, STPs may provide additional functions for some services. Global Title Translation (GTT, or SS7 address translations) or Gateway screening (screening of messages entering from other networks) may require additional processing equipment (with the associated cost implications) on an STP. GTTs are used for data base queries and some circuit-based messages. Gateway screening is required for intercompany trunk signaling messages and interregional data base queries.

As can be seen from the preceding, most CCS associated equipment and facilities have multiple service based functionality. As such, the shared use of equipment and facilities is a phenomenon that must be accounted for in appropriately determining the cost of providing a specific service.

(1.2) The principles incorporated into a CCS service cost model must be appropriate to solve the problem which arises from the need to cost equipment, with partial and varying usage, that is shared by a changing mix of services.

The first requirement of a CCS service cost model is to apply an engineering based "bottom up" costing approach to address the problems associated with the proliferation of equipment in a complex network configuration. Equipment that is shared by many different services, and which is used in varying degrees and in different ways. Determining the cost of a CCS service, therefore, requires detailed analyses of each part of the network, and a determination of how it is used by the various services. The objective of the model should be to

develop basic common denominators of cost that can be combined in various ways to obtain total service costs for a specific service application.

The second and third requirements are to produce forward-looking costs which are long term and stable. The requirement for forward looking costs is mandated by the economic need to associate the cost of service with current and/or projected costs that are stable and which can, therefore, accommodate the rapid evolution of CCS networks, and the services which use them.

The need for usage-based costing is the fourth requirement. Wherever there is shared equipment, the costs of such equipment must be determined as a function of the capacity which limits its usage. When this capacity is exhausted, investments in additional equipment will be required. Therefore, for each unit of capacity, a cost based on the investments required for that capacity should be determined. Conversely, for equipment with large capacities, the cost should be a function of the partial and varying utilization of the capacity. This process ascribes costs to the cost causers, which is a basic tenant of this Commission.

(1.3.1) Description of CCSCIS

As described preceding, the Common Channel Signaling Cost Information System (CCSCIS) contains engineering models of SCPs, STPs, and a CCS link network. Each model identifies equipment costs associated with the least common denominators of cost, or the basic investment drivers. These costs can be used with other information to determine costs of switched or network based services. For services using only the CCS network, CCSCIS provides the methodology for combining the system outputs to determine the costs of service.

CCSCIS currently contains seven separate equipment models: three Signal Transfer Point (STP) models, three Service Control Point (SCP) models, an SS7 link model, and an aggregation model. The current system release contains models for STPs manufactured by three different vendors: AT&T Technologies, DSC Communications Corp., and Northern Telecom Inc. The modeled SCPs include two versions of SCPs constructed with Digital Equipment Corporation (DEC) according to Bellcore's suggested design, and a model of an Ericsson SCP. The Link Model examines several types of CCS links, each of which can use many different transmission technologies. The Aggregation Model combines the outputs of each model to determine combinations of unit investments and costs useful to calculate service costs. New models are constructed as new types of CCS equipment are installed. Additionally, equipment prices are regularly updated, and models are revised to include additional functions and engineering changes as warranted.

(1.3.2)CCSCIS Model Development

The outputs of CCSCIS models represent the results of detailed analyses of equipment engineering and functionality. The methodology uses the required principles of CCS cost models described above, as well as a standard process that is not dependent on equipment type or vendor. Following is a step-by-step description of the CCSCIS model development process.

The first step in the development of a CCSCIS model is to obtain engineering data and technical information from vendors or network architects. This information includes: long range product development and delivery schedules, detailed technical descriptions of equipment architecture, current hardware engineering rules and engineered capacities, available engineering and pricing

tools, detailed descriptions of any service-specific functions, discounting schemes and resource consumption of various services or functions.

Once the functional characteristics of each piece of equipment are determined, the cost categories represented by the functions and the cost drivers of each category are identified and the equipment is "partitioned". That is, each piece of equipment is analyzed and mapped into one or more cost categories by examining the engineering rules and equipment functions. Equipment in each category are then mathematically analyzed to determine the cost of the category.

Costs of equipment categories are translated into unit investments using the limiting capacities of the equipment and algorithms that account for: multiple investments within a category at varying times during the study period, changing equipment capacities, sharing of equipment and multiple functions of equipment. The effects of partial and varying utilization of the equipment is also accommodated under various scenarios by examining the effects of service demands on each equipment category.

Models in CCSCIS differ by equipment type and vendor, but the user inputs required can be classified into four categories. The first defines study parameters. Examples include: cost methodology (average or marginal), study period, vendor discounts, cost of money, date of equipment prices to be used and whether material or EF&I equipment prices should be used. The second category pertains to cost and investment data. These include: annual charge factors, link lease expenses, capitalized RTU fees or other investments to be included and facility investments, by account (per mile and per termination).

The third category relates to information about the equipment or network. For example: information about the configuration and optional equipment, the numbers of links or link terminations, the number of miles and terminations of links (by link type) and the engineered occupancy of links. For some of the above information, data which is specific to each study area is required. The final category includes information required for utilization calculations. This data is compiled for each of several study years in the study period, as well as for each study area and link type. It includes service demands, number of links or STP link terminations, and, for shared processors on STPs, switch utilization of the processor The final category includes information required for utilization calculations. This data is compiled for each of several study years in the study period, as well as for each study area and link type. It includes service demands, number of links or STP link terminations, and, for shared processors on STPs, switch utilization of the processor.

A CCSCIS model study can include calculations of costs for a specific piece of STP/SCP equipment, or for all or part of a CCS link network. Study outputs incorporate the unit investments or costs of individual components or functions of the equipment. Output reports take into account: the cost of transporting one octet (8bits) of an SS7 message on various types of links, the cost of processing one octet of a message by STP link termination equipment, the cost of processing special types of messages (database queries of various services, global title translations, and gateway screening), the costs of storing database records in SCPs and costs of terminating SS7 links on STPs.

Development of CCS based service costs requires the combination of costs of

each piece of CCS equipment used for providing the service. If multiple STPs or SCPs are used to provide the service, weighted averages of these costs can be calculated with the CCSCIS Aggregation Model using weights derived from user data entered in the individual studies. The costs of each type of equipment (regional or local STPs, SCP, or links) are combined using network parameters entered by users or derived from input data. The outputs of the aggregation process are combined unit investments and unit costs (where the latter are unit investments multiplied by annual charge factors) of SS7 messages used for circuit-based services, data base services, or trunk signaling. SNET extracted the unit investment data from CCSCIS and input them into the MICRA cost model to develop recurring costs. Data base service outputs represent either costs of equipment used for intraregional queries, or for either incoming or outgoing interregional queries. These unit costs outputs are transformed into costs for services when they are multiplied by the numbers of units used (octets, GTTs, queries, etc.) and summed over cost categories.

SUMMARY

The preceding discussion demonstrates the complexity of CCS services and the attendant need for a detailed costing mechanism to develop CCS based service costs. A mechanism that is engineering oriented and which uses proven economic theory to produce the individual costs of technology-specific CCS network functions;v a mechanism that solves the problem of assigning the costs of shared CCS equipment to individual services, using a methodology which guarantees that each service is assigned equal costs for equal use of resources. Inasmuch as, CCSCIS embodies all these elements, it is an appropriate model for calculating the costs for common channel signaling based services.

PART 32 ACCOUNTS ACCOUNTING CLASSIFICATION

PART 32 ACCT. CODE	ACCOUNT TITLE
1. LIDB QUERY TRANSPORT	
2232.2	(Circuit Equip./Fiber)
2212.1	(Digital Switch)
2411	(Poles)
2421.2	(Aerial Cable)
2422.2	(Underground Cable)
2111	(Land)
2121	(Buildings-Owned)
2441	(Conduit Systems)
2. LIDB VALIDATION QUERY	
2124	(DBAS II computer)
2232.2	(Circuit Equip./Fiber)
2212.1	(Digital Switch)
2411	(Poles)
2421.2	(Aerial Cable)
2422.2	(Underground Cable)
2111	(Land)
2121	(Buildings-Owned)
2423.1	(Buried Cable)
2441	(Conduit Systems)
3. STP PORT TERMINATION	
2232.2	(Circuit Equip./Fiber)
2212.1	(Digital Switch)

Attachment C

Listed below are the factors employed by MICRA that were in effect for the LIDB filing.

Cost of Money	12.2%
Property Tax	3.29%
Corporate Business Tax	11.5%
Federal Income Tax	34.0%

Plant Factors:

Class of Plant	Description	Tax Life	Plant Life	Gross Salvage	Rmvl Cost	Year 1 Inflation	Year 2 Inflation
CCS Access Port Termination							
Link Node	ESS Digital	5	18	13%	7%	-2%	-2%
CSU Modem	Digital Circuit	10	12	5%	10%	-1.5%	-1.5%
LIDB Access Query Transport							
STP	ESS Digital	5	18	13%	7%	-2%	-2%
Link Line Haul	Fiber	15	30	5%	2%	-4%	-4%
Link Circuit	Digital Circuit	10	12	5%	10%	-1.5%	-1.5%
LIDB Access Validation Query							
SCP	ESS Digital	5	18	13%	7%	-2%	-2%

In addition, sales tax of 8% is included in the total investment for each class of plant.

Documentation:

1. Tax Life, Plant Life, Gross Salvage, Removal Cost: These are the company's estimates of prospective lives and salvage values.

2. Year 1 and Year 2 Inflation: Inflation factors are based on a prospective view of Telephone Plant Indexes.

Exhibit 12

OVERHEAD LOADING FACTOR

LOCAL TRANSPORT

LINE	DESCRIPTION	SOURCE	SNET
1	Revenue Requirement @ 11.25 ROR	1990 ARMIS Rpt 43-01	59,667,000
2	COE - Switching	ARMIS, L640	35,178,000
3	COE - Transmission	ARMIS, L650	72,195,000
4	Cable & Wire	ARMIS, L660	27,992,000
5	Total Local Transport Direct Investment	L2 + L3 + L4	135,365,000
6	FDC Factor	L1/L5	0.44
7	Direct Annual Cost Factor	ARMIS (Note 1)	0.30
8	Overhead Loading Factor	L6/L7	1.4693

Note 1: The sum of Plant Specific, Plant Non-specific maintenance expense; depreciation; customer operations; return; and taxes from the 1990 ARMIS reports divided by Line 3, Total Local Transport direct investment.

TRANSPORT OVERHEAD LOADING FACTOR WORKSHEET

02-Mar-92

1990 ARMIS 43-04

ARMIS LINE NO.		TRANSPORT DIRECT EXPENSES ($000s)
5026	COE MAINTENANCE	5,475
5076	CABLE & WIRE MAINTENANCE	1,657
6010	NETWORK OPERATIONS	6,297
7320	CUSTOMER OPERATIONS TOTAL	2,332
6030	DEPRECIATION-SWITCHING	3,426
6050	TRANSMISSION	5,997
6070	CABLE & WIRE	1,498
	RETURN + TAXES (SEE CALC. BELOW)	14,069
	SUBTOTAL EXPENSES, RETURN, TAXES	40,751
	DIRECT INVESTMENT (FROM EXHIBIT 12)	135,365
	RATIO: DIRECT ANNUAL COST FACTOR	0.30

RETURN & TAX CALCULATION

8007	STATE TAX	4,882
8020	FEDERAL TAX	3,809
8044	RETURN	12,293
	TAXES/RETURN RATIO	0.707
8040	TOTAL TRANSPORT AVG NET INVT	95,281
	* AUTHORIZED ROR	11.25%
	= NET RETURN	10,719
	TAXES/RETURN RATIO	0.707
	TAXES	7,578
	NET RETURN	10,719
	TAXES	7,578
	RETURN + TAXES	18,297
	DIRECT INVT/TOTAL TRANSPORT INVT	0.7689
	DIRECT TRANSPORT RETURN & TAXES	14,069

RATE DEVELOPMENT

CCSAS

AND

LIDB VALIDATION SERVICE

	Source	Value
STP PORT TERMINATION - RECURRING		
STP Access Mileage Direct Cost	Exhibit 2	$810.85
Overhead Loading Factor	Exhibit 12	1.4693
Upper Limit	Line 1 * Line 2	$1,191.38
Recurring Rate	Exhibit 16	$900.00
Ratio of Rate to Upper Limit	Line 4/Line 3	0.7554
Ratio of Rate to Direct Cost	Line 4/Line 1	1.1099
STP PORT TERMINATION - NONRECURRING		
STP Port Termination Cost	Exhibit 4	$1,251.42
Overhead Loading Factor	Exhibit 12	1.4693
Upper Limit	Line 1 * Line 2	$1,838.71
Recurring Rate	Exhibit 16	$1,300.00
Ratio of Rate to Upper Limit	Line 4/Line 3	0.7070
Ratio of Rate to Direct Cost	Line 4/Line 1	1.0388

RATE DEVELOPMENT

CCSAS

AND

LIDB VALIDATION SERVICE

	Source	Value
LIDB QUERY TRANSPORT		
LIDB Query Transport Direct Cost	Exhibit 3A	$0.00023
Overhead Loading Factor	Exhibit 12	1.4693
Upper Limit	Line 1 * Line 2	$0.00034
Recurring Rate	Exhibit 16	$0.00032
Ratio of Rate to Upper Limit	Line 4/Line 3	0.9469
Ratio of Rate to Direct Cost	Line 4/Line 1	1.3913
LIDB VALIDATION QUERY		
LIDB Validation Query Direct Cost	Exhibit 3	$0.02516
Overhead Loading Factor	Exhibit 12	1.4693
Upper Limit	Line 1 * Line 2	$0.03697
Recurring Rate	Exhibit 16	$0.03668
Ratio of Rate to Upper Limit	Line 4/Line 3	0.9922
Ratio of Rate to Direct Cost	Line 4/Line 1	1.4579

RATE DEVELOPMENT

CCSAS

AND

LIDB VALIDATION SERVICE

	Source	Value
LIDB SERVICE ESTABLISHMENT		
LIDB Service Establishment Cost	Exhibit 5	$240.00
Overhead Loading Factor	Exhibit 12	1.4693
Upper Limit	Line 1 * Line 2	$352.63
Recurring Rate	Exhibit 16	$240.00
Ratio of Rate to Upper Limit	Line 4/Line 3	0.6806
Ratio of Rate to Direct Cost	Line 4/Line 1	1.0000